Trauma on trauma

Lessons from the tsunami and civil conflict in Sri Lanka

Doruk Ozgediz, MD, MSc, Julie E. Adams, MD, Rochelle A. Dicker, MD

Dr. Ozgediz (AΩA, University of California, San Francisco, 2002) is a resident in General Surgery at the University of California, San Francisco. He holds an MSc in Public Health in Developing Countries from the London School of Hygiene and Tropical Medicine. Dr. Adams (AΩA, University of Vermont, 1999) is an assistant professor at the University of Vermont College of Medicine and a practicing vascular surgeon at Fletcher Allen Health Care. Dr. Dicker (AΩA, University of Vermont, 1995) is an assistant professor at the University of California, San Francisco, School of Medicine and a practicing trauma surgeon at San Francisco General Hospital. All photographs are courtesy of the authors.

The Indian Ocean tsunami of December 26, 2004, affected eleven countries and killed more than two hundred twenty thousand people, temporarily capturing global awareness and compassion. After reviewing reports of complex wounds and missed injuries still needing treatment, we three took a two-week medical-surgical relief trip to Sri Lanka ten weeks after the tsunami, treating many patients and delivering much-needed supplies.

Although the tsunami brought us to Sri Lanka, the need for surgical treatment for tsunami victims turned out to be minimal. Instead, we were struck by the complex political and socioeconomic issues related to the longstanding civil conflict that has crippled Sri Lanka's public health infrastructure and access to care. The people of Sri Lanka are not unique—they are among the millions around the world whose daily lives are affected by the consequences of armed conflict. What set them apart for this brief moment in time was their dramatically increased worldwide visibility. The horrific natural disaster that brought us to this war-torn country also allowed us to see its underlying long-term struggles, and to ponder what greater role—beyond direct service—physicians should play in the face of such suffering.

The tsunami was over in minutes— civil conflict goes on for decades

The concern about the death toll of the tsunami, with its consequent intense media attention, and the potential diversion of funds from other pressing global health crises have been debated.[1,2] It is estimated that AIDS and malaria deliver the mortality equivalent of the Asian tsunami every week in Africa.[1] Experiences from past disasters (Hurricane Mitch, thirty-three percent, and the Bam earthquake, sixteen percent), suggest that only a fraction of funds pledged are actually disbursed to recipient countries, which may then lag in allocation.[2]

Left, Doruk Ozgediz in the operating room.

Doruk Ozgediz, Julie Adams, and Rochelle Dicker outside Killinochchi Hospital.

Second in death toll only to Indonesia, approximately thirty-three thousand people died on the coast of Sri Lanka, with an additional one hundred fifty thousand injured, and five hundred thousand displaced. Sri Lanka's disaster management after the tsunami, including its attention to immediate and longer-term public health issues, is praiseworthy, particularly in prevention of epidemics of communicable diseases.[3]

Several giant tsunami waves devastated the Sri Lankan coast in a matter of minutes, but the civil conflict—primarily between the Sinhalese majority and the Tamil minority—has continued for over twenty years. The usual mix of internal and external groups, including foreign governments, nongovernmental organizations, a substantial overseas diaspora, and aid agencies have all influenced the process. The war has killed more than sixty thousand, costs two percent of the GNP annually, and has internally and externally displaced two million people, while miring the northeast in relative poverty.[4] The civilian population has suffered extensive physical and psychological trauma, and basic medical services have deteriorated.[5]

Aid distribution in areas of conflict

Our host nongovernmental organization directed us first to the District Hospital in Killinochchi, the largest town in the Liberation Tigers of Tamil Eelam (LTTE)-controlled northeast, accessible only by the A9 highway. This road was closed from 1990 until the ceasefire in 2002, effectively depriving the region of both basic needs and essential medical and surgical

From left to right: Hindu temple in Batticaloa • Julie Adams playing with one of the children • Settlement camp in Batticaloa •

supplies.[5] Prior to the tsunami, child malnutrition rates in the northeast were estimated at thirty percent, twice the national average.[6]

Since the ceasefire, more supplies are allowed in the region; nonetheless, at the main army checkpoint, several officials carefully inspected all of our equipment and documents before granting access. We left at 1:00 AM from Colombo with over two hundred kilograms of medications and surgical supplies that are often considered disposable in the United States despite their capacity to be sterilized and reused. Deplorable road conditions and multiple military checkpoints accounted for the twelve hours it took to travel the mere 250 miles to our first destination. We appreciated firsthand the need for meticulous document preparation from various organizations, as well as the powerful deterrent posed to aid groups working in the area of prolonged delays at checkpoints (with an accompanying risk of seizure of supplies). Even the most well-intentioned charitable organizations grapple with limited financial, physical, and human resources. It is simply more efficient, and potentially safer, to deliver supplies to regions with easier access. Groups working in the northeast later expressed frustrations in not receiving supplies due both to customs delays in Colombo as well as at the checkpoints. Unless hand-delivered, many shipments seemed to go "missing." Indeed, equity in the distribution of aid after the tsunami, especially to LTTE-controlled areas, has been questioned.[7]

Surgery in dilapidated, crowded space

The Killinochchi District Hospital was the primary regional referral center after the tsunami. It usually serves two hundred thousand people, although because of the conflict precise population statistics in the region are disputable.[4] The official bed capacity is 128, but during our visit four hundred inpatients crowded into wards, on mats under cots, and in hallways.

We saw approximately seventy patients a day in the surgical clinic, mostly with war-related issues such as chronic wounds and retained shrapnel, as well as acute and chronic unmanaged conditions. Because of the dilapidated facilities, we performed many minor, and several major, procedures with dimming lights and only intermittent running water; with the significant backlog of surgical problems, there clearly were months of work to be done. We left many supplies in the region's hospitals—all consumables had been depleted and most instruments were barely functional. Overworked hospital staff performed with inspiring resourcefulness and heroic dedication in impossible circumstances. They were eager for instruction in trauma management and perioperative care, as clinical needs usually overwhelm and exhaust the time and resources required to ensure ongoing training.

Our first patient, a twenty-seven-year-old landmine-clearer with acute appendicitis, illustrated the distressing conventional standard of care for surgical emergencies. He received ketamine and atracurium and was hand-ventilated through the appendectomy, as there is no capacity for the delivery of inhaled anesthesia or mechanical ventilation at the hospital. No full-time surgeon is posted by the government in the entire LTTE-controlled northeast region of the country (the districts of Killinochchi and Mullaitivu). In our absence this patient would have been evacuated to Jaffna (northwest) or Vavuniya (south), requiring a several-hour trip through multiple army and LTTE checkpoints that close daily at 5:30 PM. Undoubtedly, for surgical emergencies, patients' lives are put at great risk.

There is a similar lack of capacity in pathology. Biopsies are sent to Colombo and patients wait several months for a diagnosis, often in a critically limited time period during which a curative intervention may be possible. With the aid of a visiting pathologist, we immediately diagnosed several patients with suspicious tumors and masses and determined appropriate management.

The small northeastern coastal town of Mullaitivu, an hour's drive east of Killinochchi, lost half of its population of seven thousand in the tsunami. Mullaitivu is also a higher security area for the LTTE, and bombed-out buildings seamlessly intermix with tsunami wreckage. The waters destroyed a center for war orphans and claimed the lives of more than half the children—the survivors have now been moved to another site and joined with children orphaned by the tsunami. Just across the street, the surging waters that day also left an indelible line on a school's outer wall, which had been a memorial bearing the names of their students who died in the war.

Over ninety percent of those displaced by the tsunami in Sri Lanka have been displaced multiple times before because of the civil war.[8] We met families who had fled the country years ago to escape the conflict, returned with hope to their homeland

LTTE Flag • Surgical ward rounds at Killinochchi Hospital • Travelling through Kandy, the tea-growing region of Sri Lanka

Landmine sign.

after the 2002 ceasefire, and later lost everything in the tsunami. One man in a settlement camp who walked with an artificial leg from a landmine injury during the war quietly shared the loss of two of his three children in the tsunami. Signs off the main road leading into Mullaitivu, which was overrun by water that day, warn children about landmines and explosives. As many as 1.5 million mines still infest the country,[9] particularly in contested areas. Fortunately, initial concerns that the tsunami uprooted mines proved to be unfounded.

The psychological sequelae of disaster: Depression and anxiety

In the tsunami-affected regions, many civilians lost immediate family, material possessions, and livelihoods. In transition from the emergency response phase, hospital directors and community leaders expressed an urgent need for mental health services. Some patients voluntarily shared feelings of sadness, survivor guilt, and hopelessness, while parents who had not recovered the bodies of their children were still searching. We noted that some children, after eagerly approaching us with smiles and carefully mouthed playful English words "What is your name," followed this with comments such as "brother, tsunami" or "sister, tsunami" indicating the people they had lost. We wondered whether this was simply a need for self-expression or conditioning from waves of well-intentioned overseas volunteers who kept asking about the tsunami's personal effect.

In the United States, the epidemiology and treatment of psychological sequelae following disaster, especially the practice of "psychological debriefing," have been under careful scrutiny since September 11, 2001.[10] The WHO estimates that twelve months after a disaster, twenty percent of the population will suffer mild to moderate forms of depression and anxiety.[11] The cultural validity of posttraumatic stress disorder in non-Western populations and its place in a broad spectrum of responses to trauma have also been questioned by the international public health community. The most appropriate and effective mental health interventions for the diverse populations affected by conflict and disaster, including this recent tsunami, are still being explored.[12–15]

Concern about trauma is even greater in Sri Lanka given its preexisting rate of suicide, one of the highest in the world.[16] Though the problem is poorly understood, past analyses posited that poverty, conflict, and ready access to chemical pesticides are contributing factors.[16] After the tsunami, the mental health professionals we encountered in Sri Lanka were frankly overwhelmed, partially due to the baseline absence of mental health services. In the camps, hospitals, and communities, we did our best to administer what has been described as "psychological first aid" when appropriate.[17]

We saw great resilience of spirit in villagers rebuilding homes on the coasts and in community leaders working tirelessly to support their people. Fishermen waded fearlessly neck-deep in the same waters that generated the tsunami to hand-place nets—eighty percent of the country's thirty thousand fishing boats were destroyed.[18] The people's concern over a new national law prohibiting living accommodations within one hundred meters of the coast reminded us that the restoration of livelihoods may be even more crucial to regaining a sense of well-being than any other targeted psychological intervention. This is consistent with reports emphasizing reestablishment of social coherence and community networks over "psychological tool kits" imported by outsiders in the wake of conflict and disaster.[12]

From left to right: Rochelle Dicker sees a patient in a camp • Inside the Santholan orphanage • Vehicle searches at checkpoint •

Disaster prevention

Seismologists are still struggling with the lessons of the December 26 earthquake and tsunami.[19] On that day, the first waves hit Indonesia within thirty minutes of the quake and reached Sri Lanka within two hours. On March 28, as we returned to Colombo from the coast of Batticaloa, BBC television reported an 8.3 magnitude earthquake, later upgraded to 8.7, in almost the same location. We had just left the coastal population and wondered how they would be warned of a possible tsunami risk. The Sri Lankan president subsequently issued coastal evacuation instructions over radio and television—precisely how many people at potential risk were evacuated that night remains unknown.

Fortunately, in that case there was no tsunami, perhaps because the earthquake was only one-third as strong and deeper in the sea-trench, so that it failed to vertically displace the ocean floor.[20] Nonetheless, the event underscored the need for the development of an Indian Ocean tsunami warning system—akin to the Pacific Ocean system—with the capacity to reach even the most marginalized populations. Plans for such a system have been initiated, and it is projected to be in place in 2006.[21]

Advocacy—and the future

After completing our trip, we compiled a surgical needs assessment for local and international organizations. We also shared our concerns about the surgical and medical needs of the region with the U.S. embassy in Colombo. Embassy staff officially recommend no travel in the north and east of Sri Lanka for security reasons—the U.S. State Department classifies the LTTE as a terrorist organization.[22] Embassy officials were attentive and interested to hear about our perceived security in LTTE-controlled areas, and of the medical and social situation of the northeast. We were encouraged that several days later U.S. Congressman Danny K. Davis from Illinois visited Killinochchi and Mullaitivu to document regional humanitarian needs. In doing so, he also met with LTTE political leaders in the first meeting in recent history between a U.S. government official and the LTTE. While it may generally be true that global responses to natural disasters are "less politically risky" compared to complex emergencies,[2] the precarious and complex balance of forces at play when these events occur in conflict zones blurs the distinction.

A global effort will be needed to begin to meet the needs of the civilians in this region, the chronically underserved who bear the greatest consequences of both this conflict and the tsunami disaster. The WHO's "Health as a Bridge to Peace" program gives health professionals a promising opportunity to play a more direct role in peace building and conflict resolution.[23] Though not without controversy, this approach has positively engaged warring factions at the height of the conflict in Sri Lanka (and elsewhere) through, for example, the negotiation of ceasefires to allow mass vaccinations.[24]

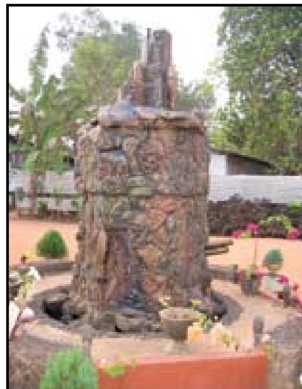
In Sri Lanka, the committed engagement of all parties in a proposed joint mechanism for equitable distribution of tsunami relief has provided a rare opportunity for political consensus and momentum towards reconciliation, which has nonetheless been challenging to achieve. If successful, Sri Lanka may be an example to neighboring Aceh and to other countries grappling with the overwhelming multidimensional challenges of recovery from a natural disaster in the face of a seemingly insurmountably polarized civil conflict.

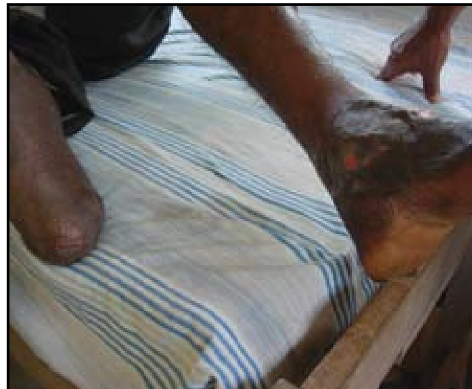
Voluntarism

Many of our colleagues told us of their desire to do similar humanitarian work after hearing about our experience in Sri Lanka. While this may be a partial result of seeing the images of disaster broadcast by the news media, it may also be due to the heavy financial and administrative burden of our own health system, which at times leaves us all longing to directly care for people without all the red tape. Though a natural disaster may compel this move to help, as it did for us, there are countless populations around the world without access to even the most basic medical and surgical care. In most cases, this is due to poverty and underdeveloped health systems, and sometimes it is exacerbated by civil conflict as in Sri Lanka. Many organizations provide ongoing short- and longer-term volunteer opportunities to work in these settings. The American College of Surgeons, for example, is developing a database of such organizations and considering a collaborative role with counterparts in developing countries.

At a personal level, as health care providers, each of us must define what he or she can and should do to confront current glaring local and global health inequities. For some, it might be through direct service, for others through political and social advocacy, both here and abroad. Our experience in Sri Lanka benefited us as much as, if not more than, our patients and Sri Lankan colleagues, who generously welcomed and trusted us while sharing their many wounds and extraordinary resilience.

Children in a Mullaitivu camp • Hindu temple in Batticaloa • A shrapnel injury • Woman who lost several children in the tsunami





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Since this manuscript was written, tsunami recovery has been stalled by the escalating civil conflict. Three thousand people died last year as casualties of the conflict, and thousands in the region were again displaced.[25] Many aid organizations are working to fulfill the needs for food, water, and access to essential medicines, further hindered by the monsoon season. We were especially distressed to hear that Killinochchi General Hospital was damaged by bombs several weeks ago, and had to be evacuated.[26] Talks in Geneva between the Sri Lankan government and the LTTE had failed to make progress. The world must be made aware of this quietly escalating civil disaster, which was overshadowed by the results of the tsunami.

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Address correspondence to:
Rochelle A. Dicker, MD
University of California, San Francisco
San Francisco General Hospital
1001 Potrero Avenue, Box 0807
Department of Surgery, Ward 3A
San Francisco, California 94110
E-mail: dickerr@sfghsurg.ucsf.edu